

## **TAMIL NADU NEWSPRINT AND PAPERS LIMITED**

### **FINDINGS OF COMPREHENSIVE ENVIRONMENTAL IMPACT ASSESSMENT (CEIA) CARRIED OUT DURING SEP'04 TO SEP'05.**

During 2004, TNPL has embarked upon a Mill Development Plan (MDP) of its production facilities with a view to achieve more environment friendly operational performance of the mill and simultaneously accomplish the objective of modernisation of process technology.

This MDP has been drawn up to meet the requirements of the Ministry of Environment and Forests (MoEF), to adopt more environmentally friendly process technology to meet the Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines and to achieve economy of scale of operation.

The total cost for the project is Rs.565 crores. Out of this, Rs. 159 Crores has been proposed to be earmarked for environmental Management. As part of this MDP, TNPL has installed a 300 tpd Elemental Chlorine Free (ECF) chemical hardwood pulp line and a 500 tpd Elemental Chlorine Free (ECF) chemical bagasse bleach plant to replace the existing chlorine based bleach plants. Upon implementation, the total finished paper production would marginally increase from 2,05,000 tpa to 245,000 tpa, in addition to the production of 45,000 tpa of Market Pulp. The MDP is scheduled to go on stream during May ' 2008.

As part of the MDP, a comprehensive Environmental Impact Assessment was carried out by M/s Sheshayee Paper and Boards-Projects and consultancy Division, Chennai in association with Vimta Lab Limited, Hyderabad. The findings of the studies between September 2004 and September 2005 are given hereunder:

## Construction Phase

- The construction activities of new installations will not necessitate any displacement of people, cutting of vegetation, etc., as the construction will be carried out within the existing mill premises. This phase does not involve major changes in the terrain

## Operation Phase

### *Air Environment*

- The major pollutants from the mill after MDP are suspended particulate matter (SPM) and sulphur dioxide (SO<sub>2</sub>) from the power boilers, chemical recovery boiler and limekilns

The air dispersion modelling has been carried out for two scenarios using meteorological data monitored at site during the study, and the details of the resultant concentration of SPM and SO<sub>2</sub> are furnished in the table below, for industrial zone as well as residential zone.

Location	Resultant Concentration (µg/m <sup>3</sup> )	
	During the Study	After MDP
<b>Industrial Zone</b>		
SPM	237.2	236.3
SO <sub>2</sub>	23.2	27.0
<b>Residential Zone</b>		
SPM	184.6	183.7
SO <sub>2</sub>	22.5	26.3

- During the study period, the cumulative concentrations of both industrial and residential zones after implementation of the MDP will be 237.2 µg/m<sup>3</sup> for SPM and 23.2 µg/m<sup>3</sup> for SO<sub>2</sub>, 184.6 µg/m<sup>3</sup> for SPM and 22.5 µg/m<sup>3</sup> for SO<sub>2</sub> respectively. The cumulative concentrations after implementation of the MDP will be 236.3 µg/m<sup>3</sup> for SPM and 27 µg/m<sup>3</sup> for SO<sub>2</sub> (for industrial zone) and 183.7 µg/m<sup>3</sup> for SPM and 26.3 µg/m<sup>3</sup> for SO<sub>2</sub> (for residential zone). These are well below the permissible limits, thus showing insignificant impact due to the MDP

### ***Water Environment***

- In the plant, water is used mainly for paper machines, pulp mill apart from cooling water requirement and domestic purposes. The total water requirement of the mill and colony, at 41,380 m<sup>3</sup>/day, will be met from river Cauvery. No additional drawal of surface water is proposed, and hence there will be no impact on surface water resources
- The existing wastewater treatment plant is adequate for the proposed operation
- Wastewater will be treated to conform to the statutory standards of state pollution control board and MoEF before discharging on land for irrigation
- The quality of water resources in the study area will not be adversely affected

### ***Solid Waste***

- The solid waste from the coal fired boilers is mainly fly ash and bottom ash. Lime sludge is another major solid waste from the process. Chipper dust, pith and fibre sludge generated from wastewater treatment plant are the other solid wastes
- The expected total fly ash generated from the units is about 202 tonnes per day. Fly ash generated is being given to cement manufacturers. As the same practice is proposed for the post MDP scenario, no adverse impacts are associated due to ash generation. Part of the lime sludge, being disposed of as purge for non-process elements especially silica, is being given to cement manufacturers. In post MDP operations also it is proposed to re-burn the lime sludge in the lime mud reburning kilns. The pith and chipper dust generated are being used as fuel in boilers. The WWTP sludge will be dewatered in dewatering machines and the cake will be given to small cardboard manufacturers
- Hence, no adverse impacts due to solid waste generation are envisaged

### ***Soil Environment***

- An estimation of physico-chemical analysis of existing soil environment indicates no adverse impact on soil quality due to future activities of the mill.

### **Noise Environment**

- The noise levels ranging between 35 to 46 dB(A) are limited to work zone only. The baseline noise level ( $L_{eq}$ ) recorded is about 53 dB(A) and the predicted noise level at this location due to the operation of the plant is likely to be <40 dB(A). Therefore, the noise due to operation of the project will not have any bearing on the baseline noise levels due to masking effect.
- According to the Occupational Safety and Health Administration (OSHA) Standards, the allowable noise level for the workers is 90 dB(A) for 8 hours' exposure a day. Therefore, adequate protective measures in the form of ear muffs/ear plugs to the workers working in high noise areas need to be provided. In addition, reduction in noise levels in the high noise machinery areas could be achieved by adoption of suitable preventive measures such as suitable building layout in which the equipment are to be located, adding sound barriers, use of enclosures with suitable absorption material, etc. Further, in addition to the in-plant noise control measures, all the open areas within the plant premises and all along the plant boundary are to be provided with adequate greenbelt to diffuse the noise levels.

### **Socio- Economics**

- The land required for the construction under the proposed project is already under the possession of TNPL. There will not any resettlement and rehabilitation. Thus, there will not be any adverse socio-economic implications. The economic status of the area is likely to improve, as there will be direct/indirect employment generation during construction and operational phases

### **Risk Assessment & DMP**

- The preliminary risk assessment of the plant has identified no hazardous events, which would project damaging energies outside of the plant boundary. Events identified for offsite facilities are estimated to occur at extremely low incident frequencies and/or not to significant levels of consequence. Management of hazardous event scenarios and risks in general can be adequately managed to acceptable levels.

## **Conclusions**

Growth and development, in harmony with the environment, has always been the approach of TNPL.

The conclusions of CEIA are:

- The MDP meets the compliance requirement of MoEF's Charter on Corporate Responsibility for Environmental Protection (CREP).
- Community impacts will be beneficial, as the project will generate significant economic benefits for the locality.
- Adoption of Best Available Technology and Best Management Practices with more environmental friendly process, viz. oxygen delignification, and elemental chlorine free (ECF) bleaching coupled with adoption of energy efficient process and plant & machinery, results in minimising the impacts on environment.

With the effective implementation of the Environment Management Plan (EMP) during the planning, design, construction and operation phases, the MDP can proceed without any negative impact.